REMARKS

Claims 3-9 and 54-62 are pending in this application. Applicants are of the opinion that the Examiner has failed to form a prima facie case of obviousness of the pending claim, as described below.

Rejections under 35 U.S.C. §103

Claims 3-9 and 54-62 stand rejected under 35 U.S.C. §103 as being obvious based upon U.S. Patent No. 6,164,953, to Winget, in view of U.S. Patent No. 6,776,942, to Kim. Applicants respectfully disagree.

Applicants point out that to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). MPEP §2143.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

The prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or

motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Claims 4 & 56

At a minimum, the Examiner has failed to form a prima facie case of obvious with respect to claims 4 and 56 as summarized below.

1. Neither Winget nor Kim teach or suggest an integrally formed porous gas-permeable section.
2. Neither Winget nor Kim teach or suggest venting gas through the mold member.
3. Neither Winget nor Kim teach or suggest preventing recombination and condensation of said gaseous reactants within said section.
4. Neither Winget nor Kim teach or suggest the porous gas-permeable section maintaining control over temperature and pressure being applied to mold material.
5. There lacks motivation to combine Winget and Kim with respect to the porosity and pore diameter of the gas-permeable section.

1. Integrally formed porous gas permeable section

Claims 4 and 56 recites that "at least one of said first or second mold members defining the cavity includes an integrally formed porous gas-permeable section operable to vent gasses through the mold member". In one example of an integrally formed porous gas-permeable section, the specification teaches "[a]s shown in FIG. 3, a portion 19 of mold punch 14 is made from a porous, gas-permeable material." Par. 19, lines 9-10.

The Office Action is silent with regards to this claim feature. Winget fails to teach or suggest any mold member which includes an integrally formed porous gas-permeable section. In contrast Winget teaches that the porous member is separately manufactured and mechanically attached to the mold members.

> The porous parts 12 and 14 are fit and secured within the mold halves 11 and 13, respectively, such as by bolts (not shown). Col. 3, lines 41-43.

Furthermore, any modification of Winget to include the mold member of Kim would change principle operation of Winget from a gas absorbing mold to a gas venting mold. For at least this reason, the rejections to claims 4 and 56 are believed to be improper.

2. Venting gas through the mold member

Claims 4 and 56 also recites that "at least one of said first or second mold members defining the cavity includes an integrally formed porous gas-permeable section operable to vent gasses through the mold member". In one example, the present invention teaches continuous venting of the gas and moisture formed in the chamber to maintain temperature and pressure.

> During the molding process, as indicated in block 120, gaseous reactants along with entrapped air and moisture are continuously vented through the porous, gas-permeable portion 19 of mold assembly 10, as shown in FIG. 3. Par. 24, lines 1-5.

The Office Action is silent with regards to this feature. Winget teaches only absorption of the gas formed within the mold member and not venting.

> The first and second porous parts 12 and 14 are fit within the first and second mold halves 11 and 13, respectively, so that the first and second porous parts 12 and 14 absorb gas and volatiles trapped at first and second surfaces, respectively, of the article in the closed position in the mold to degas the first and second surfaces of the article. Col. 4, lines 1-6

Furthermore, the Examiner acknowledges that Winget only teaches absorption of gases and not venting.

> Winget is capable of operating at a high temperature and high pressure because gases and volatiles are built up in the mold cavity during the molding process. Office Action, p. 3, lines 16-18.

While Winget does recite that a vent hole may be included, albeit in a seemingly less preferred embodiment, it does not teach that a vent hole may be formed it does not teach that the vent hole is formed in the porous material. Furthermore, Winget fails to teach or suggest that any vent hole would be utilized or even capable of utilization during the molding process to effectively vent the gas formed in the cavity during

molding. For at least these reasons, the rejections to claims 4 and 56 are believed to be improper.

3. Preventing recombination and condensation of said gaseous reactants within said section

Claims 4 and 56 also recite that the porous gas-permeable section is operable to prevent recombination and condensation of said gaseous reactants within said section. This is supported in originally filed claim 27 which describes:

> [P]reventing condensation and recombination of the gaseous reactants in pores of said porous gas-permeable portion of said mold assembly during venting by maintaining a temperature of said portion of said mold assembly above a minimum predetermined temperature.

The Office Action is silent with regards to this feature. Nowhere in Winget does it teach or suggest that the porous material prevents condensation and recombination of gaseous reactants in pores. Furthermore, in view of the inability of Winget to vent gaseous reactants through the porous material (as it is configured only to absorb) and lack of teaching of maintaining a minimum temperature of the mold it appears that the porous material of Winget is not even capable of this feature. For at least this reason, the rejections to claims 4 and 56 are believed to be improper.

4. The porous gas-permeable section maintaining control over temperature and pressure being applied to mold material

Claims 4 and 56 also recite that the "porous gas-permeable section controls venting of the gasses while maintaining control over temperature and pressure being applied to mold material located within the cavity." The specification teaches:

> The mold assembly, as described in more detail below, has a porous, gas-permeable portion that enables the gaseous reactants along with entrapped air and moisture to be vented therethrough without disturbing the mold cavity. This maintains a desired pressure and temperature range in the mold cavity at all times during the molding process and decreases cycle time. Para. 17, lines 9-16.

The Office Action is silent with regards to this feature. Not only does Winget fail to teach a porous gas-permeable section that allows for venting while maintaining control over temperature and pressure, but actually teaches no venting whatsoever during the mold process, as acknowledge by the Examiner. This is because, the mold member of Winget only provides for absorption of the gas and not venting therethrough. Furthermore, any additional venting discussed does not contemplate the ability to control pressure or temperature within the mold. As can be expected, with continuous gas discharge from the material and into the porous material there may necessarily be an increase in pressure. For this reason, it is not possible for the porous gas-permeable section to maintain control over temperature and pressure. For at least this reason, the rejections to claims 4 and 56 are believed to be improper.

5. Motivation to combine Winget and Kim

Applicants are of the opinion that there lacks motivation to combine the teachings of Kim with Winget as modification of Winget to include the indicated features by the Examiner would "change the principle of operation" of Winget and leave the Winget invention "unsatisfactory for it intended purpose".

Winget teaches a mold device have a porous member adapted for "absorbing" gases generated from within the mold cavity. Winget is silent with respect to the porosity or pore diameter of the gas-permeable section. Kim teaches a mold device including a vacuum for venting gases through a porous member and certain ranges of porosity and pore diameter. The Examiner asserts that it would have been obvious to one of ordinary skill in the art to modify Winget to include the porosity and pore diameter of Kim because the mold member having these properties would enhance venting from the mold cavity during molding and would reduce formation of unwanted marks on the produce. Applicants respectfully disagree.

First, the Examiner has ignored the molding processes of Winget and Kim as Winget is directed to a passive gas absorbing porous material while Kim is directed to active venting of a cavity with a vacuum force. Winget teaches that the porous material is attached and located within supporting mold members. As gas is formed in the cavity of Winget it is absorbed or travels into the porous portion of the mold. In contrast, Kim teaches the use of a vacuum system to generate negative pressure

within the cavity to draw the gases formed in the cavity through the porous material. It should be appreciated that the porosity and pore diameter between a passive absorption system may likely be different than the porosity and pore diameter of an active venting system. Accordingly, there is no expectation of success, within the references, that the porosity and pore diameter of an active vacuum venting system would be sufficient for a passive absorption system.

Furthermore, if Winget were to be further modified to include the vacuum system of Kim, the modification would alter the principle of operation of Winget, if not render the invention unsatisfactory for its intended purpose. As previously mentioned, the molding system of Winget comprises a passive gas absorption system and not an active venting system. At a minimum, such a change would clearly change the principle of operation of Winget, if not render the invention unsatisfactory for its intended purpose. For at least this reason, the rejections to claims 4 and 56 are believed to be improper.

Claim 3

The Examiner has failed to establish a prima facie case of obvious with respect to claim 3. For the same reasons stated above, Applicants are of the opinion that there lacks motivation to modify Winget to include the porosity of Kim. Even if this is done, the combination of Winget and Kim still fails to teach the features of claim 3. However, the Examiner now suggests further modifying Winget and Kim to increase the pore diameter of Kim 150% to 500% of what is taught. In doing so, the Examiner asserts one skilled in the art would have been motivated to make this further modification depending on the material being formed, the temperature and pressure of the cavity during the molding process. However, the Examiner has failed to show how modifying the pore diameter of Kim is necessary for venting gas of different material types, temperature ranges or pressure, particularly when the system of Winget is a passive gas absorbing system. This assertion appears to be nothing more than attempt to teach the claim features using hindsight. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

The Examiner further asserts that "it is well settled that determination of optimum values of cause effective variables such as these process parameters is

within the skill of one practicing in the art." However, this assertion is clearly a per se rule, the kind of which has been admonished. The CAFC wrote in the case of In re Ochiai, 37 USPQ2d 1127, 1133 (CAFC 1995) that:

> The use of per se rules, while undoubtedly less laborious than a searching comparison of the claimed invention -- including all its limitations -- with the teachings of the prior art, flouts section 103 and the fundamental case law applying it. Per se rules that eliminate the need for fact-specific analysis of claims and prior art may be administratively convenient for PTO examiners and the Board. Indeed, they have been sanctioned by the Board as well. But reliance on per se rules of obviousness is legally incorrect and must cease. Any such administrative convenience is simply inconsistent with section 103, which, according to Graham and its progeny, entitles an applicant to issuance of an otherwise proper patent unless the PTO establishes that the invention as claimed in the application is obvious over cited prior art, based on the specific comparison of that prior art with claim limitations. We once again hold today that our precedents do not establish any per se rules of obviousness, just as those precedents themselves expressly declined to create such rules. Any conflicts as may be perceived to exist derive from an impermissible effort to extract per se rules from decisions that disavow precisely such extraction.

In view of the foregoing, the use of per se rules to assert obviousness of the porosity and pore diameter of the porous member, as claimed, is impermissible. For at least these reasons, the rejection of claim 3 is believed to be improper.

Claims 6-8 and 56, 61

The Examiner has failed to establish a prima facie case of obvious with respect to claims 6 -7, 56 and 61. The Examiner has failed to show where either Winget or Kim teaches or suggest a mold member operable to heat the mold cavity, as recited in claim 6 and 56, and the temperature ranges as described in claim 7. The Examiner has also failed to show where either Winget or Kim teaches or suggest both the first and second mold member being capable of heating the mold cavity, as recited in claim 61. The Examiner asserts that Winget is capable of operating at high temperatures and high pressure because gases and volatiles are built up in the mold cavity during the molding process. However, this is not disclosed in Winget. While Winget does contemplate the mold system being used in

compression molding systems, it does not disclose any heating of the mold material, let alone a first or second mold member (or any other member) operable to heat the cavity. This feature is clearly supported within the present invention.

> Top platen 16, mold body 12, and mold punch 14 are each operable to heat mold assembly 10. This heats up the molding ingredients and helps to initiate reactions in the mold cavity 20. The operating/molding temperature will vary depending upon the materials used. The operating/molding temperature is chosen to facilitate the reaction in mold cavity 20. Par. 20, lines 9-15.

In contrast to Winget, the specification is clear that the mold member has the capability of heating the mold cavity. This is not merely an inherent functional feature as describe by *In re Schreiber*, but instead, a member having actual structural capability to perform heating of the cavity.

Claims 8 and 56 recites that the configuration of the mold is operable to vent gases from the mold at pressures between about 200 to 2,000 kg/cm2. Neither Winget nor Kim teach or suggest this feature. The Examiner asserts that "the operating conditions of the apparatus can not [sic] be used to determine the patentability of apparatus claims". The Examiner further asserts that "claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. "

Applicants assert that the mold members are capable to operate at pressures between about 200 to 2,000 kg/cm2. This is not merely an inherent function, but instead, a mold system having actual structural capability to operate within a specific pressure range. For at least these reasons, the rejection of claims 6 -7, 56 and 61 are believed to be improper.

Claims 54 and 56

The Examiner has failed to establish a prima facie case of obvious with respect to claims 54 and 56 because the Examiner has failed to show where the features of claims 54 and 56 are shown or suggested by the prior art. More specifically, the Examiner has not shown where Winget or Kim teaches or suggests that the first mold member comprises a punch formed at least in part of micro-porous sintered aluminum. Furthermore, neither Winget nor Kim includes a mold member

comprising a punch. At best, Winget teaches ejector pins (28) and core pin (30) "which are conventional design and which perform their intended function in making plastic articles". Col. 3, lines 65-67. For at least this reason, the rejections of claims 54 and 56 are believed to be improper.

Claim 55

The Examiner has failed to establish a prima facie case of obvious with respect to claim 55 because there is a lack of motivation to make the suggested modification to Winget. Claim 55 recites that the entire first mold member comprises micro-porous sintered aluminum. The Examiner acknowledges that this is not taught by Winget but asserts that this feature is taught by Kim and it would have been obvious to one skilled in the art to modify Winget to include this feature of Kim. However, there exists no motivation to make the asserted modification of Winget.

Throughout the specification, Winget only describes the absorption of gas from the mold cavity. In doing so, in the embodiment referred to by the Examiner, Winget consistently recites that "[t]he first and second porous parts 12 and 14 are fit within the first and second mold halves 11 and 13, respectively". Col. 4, lines 1-2. Winget further recites "[w]hen the mold 10 is opened, the gases absorbed by the porous parts 12 and 14 are released at atmospheric pressure." Nowhere in Winget does it teach or suggest the option or possibility of forming the first or second mold member entirely of porous material. Nor does Kim make the suggestion that its mold member can be used to replace mold member such as those described in Winget. The Examiner asserts that the motivation to make the proposed modification would be to enhance venting from the mold cavity during the molding process. However, that is not how the mold system of Winget functions. Winget does not vent gas through the molds but instead absorbs the gas formed from within the mold cavity. Furthermore, the proposed change by the Examiner would, at a minimum, "alter the principle of operation" by removing the absorption configuration of Winget and replace it with the venting/vacuum configuration of Kim. For at least this reason, the rejection of claim 55 is believed to be improper.

Claims 5, 9, 57-59

Applicants do not acquiesce to the asserted rejection of claims 5, 9 and 57-59, but instead, reserve the right to address these rejections at a later time.+

CONCLUSIONS

In view of Applicants' remarks, the Examiner's rejections are believed to be rendered moot. Accordingly, Applicants submit that the present application is in condition for allowance and requests that the Examiner pass the case to issue at the earliest convenience. Should the Examiner have any question or wish to further discuss this application, Applicant requests that the Examiner contact the undersigned at (248) 292-2920.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent the abandonment of this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-1097 for any fee which may be due.

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